PROGRAM HAVING A COPYING FUNCTION AND INFORMATION RECORDING MEDIUM STORING THE SAME PROGRAM

FIELD OF THE INVENTION

The present invention relates to a program having a copying function and an information recording medium having the same program, and in particular, to a program functioning to copy image data and application software, as well as to an information recording medium in which the same program has been recorded.

BACKGROUND OF THE INVENTION

In order to view photographic prints which a user captured by a camera, a user generally orders print service of an exposed film to an order receiving shop, such as a mini-laboratory or a photo-service shop of a large photo-finishing laboratory, after which the user arranges the

prints in a photographic album, and views them. Recently, with the popularization of digital devices, the user downloads picture images captured by a digital camera into a computer terminal, such as a personal computer, to view the picture images, or the user orders the shop to transfer film images taken by an analog camera to digital image data, and thereby the user can view the picture image on a computer terminal.

Further, recently provided has been a handy terminal device, such as a cell-phone, incorporating a photo-capturing function. Such a method is a way that the picture image data, captured by the photo-capturing function, is displayed on the display means of the handy terminal device, or the image data is sent from the handy terminal device to the computer terminal so that the user can view the image data on the computer terminal.

According to the above-mentioned method, the captured images can be stored and controlled as digital data in a hard disk of the computer terminals, or information recording media, such as a CD-R, or a DVD-R, by which it is possible to save the trouble to fix pictures in a traditional album, and additionally, there is no need to store bulky three dimensional albums, which is a merit. In the case of

photographic prints, the user can easily find targeted

prints, simply be referring to the title of the album,

however, when the user controls the photographic image only

as digital data, the user must usually find the image data by

a difficult alphanumeric file name, which is not convenient

to retrieve the targeted images, which is a prosaic problem.

For example, as disclosed in Patent Document JP-A 5-

108732, in a system of silver salt photography, for arranging

the pictures in the album, the user produces the various

albums in accordance with concepts of the pictures or in a

time-series of events, and when the user wishes to view the

pictures, the user selects the album, and finds related

pictures or views the arranged layout of various pictures so

that the targeted pictures can be easily located. However,

in the case of the digital images, the user must retrieve the

digital images by him/herself, using a key word which is

textual data added onto the file name and the image data,

alternatively the user must retrieve the images using

application software.

In order to reduce the above inconvenient matters, the

above Patent Document discloses as below.

Original picture data is recorded in a recording and

reproducing device from an original picture input means

through an original picture recording/reproduction control

means, and this original picture data is edited by a picture

editing means as simplifying it, and it is displayed on a

picture display means by an inspected picture

recording/reproduction control means, and simultaneously, the

procedure of editing is recorded previously by an editing

information recording/reproduction control means, and as for

the picture designated by an output picture designating

means, the high-definition output picture data generated by

an output picture data generating means by using the original

picture data in accordance with editing information is

generated, and the picture is outputted (printed) by a

picture output means like a printer, etc.

When the user edits the original picture images and

retrieves them, using the method disclosed in the above

Patent Document, the user can easily view the targeted

pictures in the form of an album, similar to conventional

silver salt pictures, via the simplified image data.

Thereby, when the user prints a page of the digital album or

a picture image, the user can obtain a clear image, using a

highly accurate original image data.

[Patent Document 1] JP-A 5-108732 (pages 3-6, and Fig.

1)

The user can retrieve the targeted pictures from the recorded image data using the above method. However, in order to use the photographic image as image data, the user is requested to prepare by him/herself various kinds of application software for not only displaying the image data but also executing the process for treating the image data. In this case, the application software includes a program for displaying the image data in the form of an album, a program for displaying a slide show, a program for processing the image data, and a program for producing a post card or a designed print from the image data.

Further, in order to perform the process of the above application software, the user is requested to select, on each occasion, the targeted image data from the hard disk or the memory means, such as an information recording medium, in which the image data are stored, still further, the user is requested to set processing conditions for the various kinds of the application software, which can be quite cumbersome and time consuming. Specifically, owing to the popularization of digital devices, such as digital cameras, and cell-phones incorporating a camera function, and further, under the condition that the population taking digital photos increases, if the user is always requested to perform the

above tasks whenever desiring the images, it is impossible to casually retrieve the digital image data.

Yet further, it is a common case in which the user captures images and enjoys them personally, or shares the images with friends as a gift. In order to effectively enjoy the digital images, it is necessary that only the necessary image data and the application software are recorded into the information recording medium, such as a CD-R (compact disk-readable). Though the information recording media, such as CD-R or DVD-R (digital versatile disk minus readable), are relatively inexpensive, a writing software must ordinarily be used, and thereby it is impossible to easily copy the necessary image data and the application software into the CD-R or DVD-R, though it is relatively easy for a FD (floppy disk) or an MO (magneto-optical disk). It is less feasible for a user, who is not skillful in the operation of a computer terminal, to employ a computer terminal with CD-R or DVD-R. Yet further, since the above information recording media are used to display the image data on the computer terminal, they cannot be used on an image reproducing devices, such as a DVD player or a DVD recorder, having higher operationality.

SUMMARY OF THE INVENTION

The present invention has been achieved with a view toward the above-described problems. The major objects of this invention is to provide a program including a copy function which records image data as well as the necessary application software to display the image data, into another memory means, and further to provide an information recording medium into which the above described program is recorded. The object will be attained by the structures described below.

Structure 1

A program, including an image displaying program for using a computer to function as an image displaying means to display images on a display means based on image data by a predetermined expressing method, and a copying program for using the computer to function as a receiving means to receive a specified image data copying signal which specifies image data as an object to be copied, whereby the specified image is displayed from among the image data by the image displaying program on the display means via the predetermined expressing method, and for using the computer to function as a copying means to copy the specified image data and the

image displaying program into a predetermined area, after
receiving the specified image data copying signal.

Structure 2

In the program described in Structure 1, the image data
to be copied includes image data which is the original base
of the image to be displayed on the display means via the
predetermined method, or image data which have been processed
or produced based on the original image data.

Structure 3

In the program described in Structure 2, the image data
processed or produced based on the original image data,
includes motion image data which is one in which
predetermined difference data is added to the original image
data, or image data used as a design print combined by the
original image data.

Structure 4

The program, described in Structures 1 - 3, uses the
computer to function as a coping means which copies into the
predetermined area, at least any one of, setting information
to display the image on the display means via the
predetermined method, music/sound information which is
reproduced when the image is displayed, or ordering
information for ordering prints based on the image data.

Structure 5

An information recording medium, including an image displaying program for using a computer to function as an image displaying means to display images on a display means based on image data by a predetermined expressing method, and a copying program for using the computer to function as a receiving means to receive a specified image data copying signal which specifies image data as an object to be copied, whereby a specified image is displayed from the image data by the image displaying program on the display means via the predetermined expressing method, and for using the computer as a copying means to copy specified image data and the image displaying program into a predetermined area, after receiving the specified image data copying signal.

Structure 6

An information recording medium, including, image data, an image displaying program for using a computer to function as an image displaying means to display images on a display means based on image data by a predetermined expressing method, and a copying program for using the computer to function as a receiving means to receive a specified image data copying signal which specifies image data as an object to be copied, whereby a specified image is displayed from the

image data by the image displaying program on the display

means via the predetermined expressing method, and for using

the computer as a copying means to copy specified image data

and the image displaying program into a predetermined area,

after receiving the specified image data copying signal.

Structure 7

An information recording medium, including image data,

and a copying program for using the computer to function as a

receiving means to receive a specified image data copying

signal which specifies image data as an object to be copied,

and for using the computer as a copying means to copy

specified image data and the image displaying program into a

predetermined area, after receiving the specified image data

copying signal.

Structure 8

The information recording medium, described in

Structures 5-7, wherein the image data to be copied,

includes, image data which is the original base of the image

to be displayed on the display means via the predetermined

method, or image data which have been processed or produced

based on the original image data.

Structure 9

The information recording medium, described in
Structure 8, wherein the image data which have been processed
or produced based on the image data, includes, motion image
data which is one in which a predetermined difference data is
added to the original image data, or image data used as a
design print combined by the original image data.

Structure 10

The information recording medium, described in
Structures 5-9, uses the computer to function as a coping
means which copies into the predetermined area, at least any
one of, setting information to display the image on the
display means via the predetermined method, music/sound
information which is reproduced when the image is displayed,
or ordering information for ordering prints based on the
image data.

Structure 11

An information recording medium, which is readable by a
computer, including, image data, a first program for the
computer to function as a receiving means of print order data
signals for a print order based on image data, and for making
the computer to function as a means for producing a print
order data file based on the print order data signals, and a
copying program (which is a second program) for the computer

to function as a receiving means of specified image data
copying signals to specify the image data as a target to be
copied, and for the computer to function as a copying means
to copy, the image data which is specified by the specified
image data copying signals, the print order data file, and
the first program, into a predetermined area, after the
computer receives the specified image data copying signals.

According to the structures of the present invention,
the user can easily obtain the information recording medium
on which the copying program is stored, whereby both the
targeted image data and the image displaying program for
displaying the image data, as occasion demands, via the
predetermined method, are paired and copied onto the
predetermined area. Therefore, the user can display the
image data using the computer terminal or the image
reproducing device, such as a DVD player or a DVD recorder,
and can also perform various processes using the image data.
Further the user can copy the displayed image data and the
image displaying program as desired into another memory means
by a simple operation.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 shows a structural example of information recording medium offering systems related to the first embodiment of the present invention.

Fig. 2 is a flowchart showing the offering procedures of the information recording medium, using the information recording medium offering system related to the first embodiment of the present invention.

Fig. 3 is a block diagram showing a means in which a copying program, related to the first embodiment of the present invention, functions within the computer terminal.

Fig. 4 is a ladder chart showing the functional procedures in the computer terminal, with respect to the program of the first embodiment of the present invention.

Fig. 5 is a structural example of a screen displayed by an image displaying program related to the first embodiment of the present invention.

Fig. 6 (a) is a structural example of a screen displayed by an image displaying program related to the first embodiment of the present invention.

Fig. 6 (b) is a structural example of another screen displayed by an image displaying program related to the first embodiment of the present invention.

Fig. 6 (c) is a structural example of another screen displayed by an image displaying program related to the first embodiment of the present invention.

Fig. 7 is a ladder chart showing the operational procedures of a program, related to the second embodiment of the present invention, in the information recording medium producing terminal.

Fig. 8 is a structural example of a screen displayed by an image displaying program related to the second embodiment of the present invention.

Fig. 9 is a diagram of the exterior appearance of the information recording medium producing terminal of the present invention.

Fig. 10 is another diagram of the exterior appearance of the information recording medium producing terminal of the present invention.

Fig. 11 is still another diagram of the exterior appearance of the information recording medium producing terminal of the present invention.

Fig. 12 is yet another diagram of the exterior appearance of the information recording medium producing terminal of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In a preferred embodiment, the program related to the present invention, includes an image displaying program which uses a computer to function as an image displaying means to display images on a display means based on image data by a predetermined expressing method, and a copying program which uses the computer to function as a receiving means to receive a specified image data copying signal which specifies image data as an object to be copied, whereby a specified image is displayed from the image data by the image displaying program on the display means via the predetermined expressing method, and as a copying means to copy a specified image data and the image displaying program into a second information recording medium, after receiving the specified image data copying signal. By using a first information recording medium in which the image displaying program is recorded, the user can display the image data recorded in the first information recording medium or the image data from other recording means, on a computer terminal or an image reproducing devices, such as DVD players or DVD players, and can execute various processes. Further, by easily clicking the buttons previously provided on the screens of the various image displaying programs, the user can automatically copy the

targeted image data, the image displaying program, or setting
information. Accordingly even the user who is unaccustomed
to the computer terminal, can use the image data effectively.

In order to provide further details of the embodiments
of the present invention, the embodiments will be detailed
referring to the drawings. Additionally, the image data,
described in the embodiments, is a generic name of the data
including image information, and the image data includes
still image data as well as motion image data.

Firstly, the program and the information recording
medium in which the said program is recorded, related to the
first embodiment of the present invention, will be explained,
referring to Figs. 1 - 6, and Figs. 9 - 12. Fig. 1 shows the
structure of the system for offering the information
recording medium for the user, in which programs include
copying functions related to the first embodiment. Fig. 2 is
a flowchart showing the procedure of offering the information
recording medium to the user. Fig. 3 is a block diagram
showing the means in which the copying program makes the
computer function. Fig. 4 is a ladder chart showing the
procedure of processes executed via the computer terminal.
Fig. 5 and Figs. 6 (a), (b), and (c) show examples of
structures of the screen displayed on the user's computer

terminal. Figs. 9 - 12 show the exterior appearance of various information recording medium producing terminals.

As shown in Fig. 1, information recording medium offering system 1 of the present embodiment includes user 2, information recording medium offering shop 3 (shop 3 which offers information recording medium), and photo-service shop 4. In system 1, user 2 offers digital camera 5, cell-phone 6 incorporating a camera, and information recording medium 7, all of which have recorded photographic image data, and may also offer both of film 8 and photographic prints 9, on both of which photographic images are recorded. Information recording medium offering shop 3 reads out image data from digital camera 5 (including digital still cameras and digital video cameras), cell-phone 6 incorporating a camera, and information recording medium 7, and further, offers first information recording medium 10 in which the image displaying program for displaying the image data, as well as the copying program for recording the image data and the image displaying program has been recorded. Photo-service shop 4, such as a mini-laboratory or a large photo-finishing laboratory, obtains the image data from film 8 or photographic prints 9 submitted by user 2. Additionally, it is possible that

information recording medium offering shop 3 and photo-

service shop 4 may be within housed in the same shop.

Further, information recording medium offering shop 3

is provided with information recording medium producing

terminal 3a for reading out the image data from digital

camera 5, cell-phone 6 incorporating a camera, and

information recording medium 7. Still further, photo-service

shop 4 is provided with developing means 4a for developing

undeveloped film, reading means 4b for reading out the image

data from developed negative film or photographic prints 9,

writing means 4c for writing the read-out image data onto

first information recording medium 10, and memory means 4d

for storing the image displaying program and the copying

program. Still further, user 2 is provided with computer

terminal 2a for recording the targeted image data and the

image displaying program onto second information recording

medium 11, using the copying program stored on first

information recording medium 10. User 2 may offer second

information recording medium 11 to other users 12 as desired.

Information recording medium producing terminal 3a and

computer terminal 2a can be structured as desired. For

example, as shown in Fig. 9, information recording medium

producing terminal 3a can be formed to be a kiosk type which

is installed in a shop, such as a convenience store. As

shown in Fig. 10, a set-top box can be formed which is an

exclusive function. A portable writer in Fig. 11, or a

personal computer in Fig. 12 may also be used. For these

purposes, a DVD player or a DVD recorder, incorporating an

operational processing means or a memory means, may be used

as well. In the following description, an "image displaying

program" means a program for reading image data and

displaying said image on a display device, such as a personal

computer, or a device having an image display function, such

as a DVD player and a DVD recorder. The simplest way is one

which reads the image data and directly displays the image.

A more viewable means is one which displays a plurality of

the images in the matrix form shown in Fig. 8, wherein when

user 2 clicks once on a desired image, the image is selected

for the copy, when the user 2 clicks twice on the same image,

the selection is cancelled, and when the user 2 pushes a copy

button, the image data for the selected images and an index

display program are copied onto a blank CD-R (hereinafter

referred to as a blank CD). As a further developed form, the

"image displaying program" means a program for displaying the

image via a predetermined display method based on the image

data, such as a slide show program for showing a series of

slides, an album producing program for displaying the image data in a form of an electronic album, a design producing program for producing and ordering post cards or specially designed prints based on the image data, a reordering and producing program for reordering the prints of selected image data, and a back-up program for preserving the image data. Information recording medium 7 includes Compact Flash (a registered trademark), any type of memory card, such as a Smart Media, a Memory Stick (a registered trademark), a Multimedia card, or an SD memory card, CD-R/RW, DVD±R/RW, DVD-RAM, Blu-ray disk, MO, and ZIP. First information recording medium 10 and second information recording medium 11 include CD-R/RW, DVD±R/RW, DVD-RAM, and Blu-ray disk.

In information recording medium offering system 1 described above, the procedure, for offering user 2 first information recording medium 10 in which the image displaying program and the copying program have been stored, is detailed in the flowchart of Fig. 2. Additionally, the present invention offers first information recording medium 10 which can be used for any one of or both of the computer terminals, such as a personal computer, and the image reproducing device, such as a DVD player or a DVD recorder. When it is used for a computer terminal, the image displaying program is

necessary, but when it is used for an image reproducing

device, it is possible to reproduce the image data without

the image displaying program, that is, the image displaying

program is not always necessary. The case wherein first

information recording medium 10 used for the computer

terminal is offered will be described below.

Firstly, in step S101 in Fig. 2, user 2 purchases first

information recording medium 10, in which the image

displaying program and the copying program have already been

stored, at information recording medium offering shop 3. The

function of the copying program will be detailed later. As

shown in Fig. 3, the copying program makes the computer

function as copy signal receiving means 13a, copy data

producing means 13b, and writing mean 13c. Copy signal

receiving means 13a receives the specified image data copy

signals which specify the image data displayed by the image

displaying program, as the targeted image data to be copied.

Copy data producing means 13b produces the copy data which

includes the image data specified by the specified image data

copy signals (the image data means the original image data or

the image data produced based on the original image data),

the image displaying program which is used for displaying

said image data, and the data (for example, setting data for

setting the display method of the image displaying program)
relating to the image data as desired. Writing means 13c
copies the copy data to a predetermined memory means, such as
a CD-R.

Though only the image displaying program and the
copying program can be stored into first information
recording medium 10, the image data can also be stored, which
is used by the image displaying program. In step S102, user
2 determines whether the image data is to be stored in first
information recording medium 10, when the image data is to be
stored, in step S 103, the user inserts first information
recording medium 10, which user 2 bought, into information
recording medium producing terminal 3a in information
recording medium offering shop 3, and further, user 2
connects digital camera by which the image was captured, and
cell-phone 5 incorporating the camera to information
recording medium producing terminal 3a. Yet further, user 2
inserts information recording medium 7 in which the image
data was stored. In step S104, user 2 operates information
recording medium producing terminal 3a which writes the
targeted image data onto first information recording medium
10 (see Fig. 1).

In the above explanation, user 2 firstly bought first
information recording medium 10, and then operated
information recording medium producing terminal 3a to write
the image data onto first information recording medium 10.
However, in Fig. 1, a structure is also possible in such way
that, firstly, the image displaying program and the copying
program are previously stored in information recording medium
producing terminal 3a, next, when the image data, read out
from digital camera 5, cell-phone 6 incorporating the camera,
or information recording medium 7, all of which are offered
by user 2, are written, the image displaying program and the
copying program are also written into first information
recording medium 10. Additionally, if the image displaying
program has been previously installed into computer terminal
2a, a structure is also possible in such way that only the
copying program or only both the copying program and the
image data are stored in first information recording medium
10.

Further, in Fig. 1, a structure is also possible in
such way that when user 2 brings undeveloped film 8 or
photographic print 9 into information recording medium
offering shop 3, film 8, print 9, and the first information
recording medium which user 2 bought are sent to photo-

service shop 4, where film 8 is developed by developing means 4a, and the developed film or photographic print 9 is read out by reading means 4b, and the read-out image data is stored in first information recording medium 10 by writing means 4c. Still further, another structure is also possible in such way that film 8 or photographic print 9 is sent to photo-service shop 4, where film 6 is developed, and the developed film or photographic print 9 is read out, after which the read-out image data, the image displaying program and the copying program stored in memory means 4d are stored in first information recording medium 10. Still further, it is also possible to structure in such way that only the read-out image data is stored into another information recording medium, which is offered to user 2. Additionally, if the image displaying program and the copying program are not stored into first information recording medium 10 at photo-service shop 4, memory means 4d is not necessary.

User 2 receives first information recording medium 10 in which the image displaying program and the copying program were stored, or receives first information recording medium 10 in which the image displaying program, the copying program, and the image data offered by user 2 were stored. In step S105, user 2 inserts first information recording

medium 10 into computer terminal 2a, if the image displaying

program is not installed in computer terminal 2a, user 2

installs the image displaying program and activates the image

displaying program. Additionally, as another way, a

structure is also possible in such way that user 2 directly

activates the image displaying program, without installing

the programs stored in first information recording medium 10,

into the computer terminal 2a. Next, in step S106, user 2

reads out the image data stored in first information

recording medium 10, or the image data stored the exterior

memory means, and displays them on a convenient display means

such as a monitor. In this case, the image data means the

image data stored in the hard disk of computer terminal 2a,

or the image data stored in digital camera 5 or cell-phone 6

incorporating a camera, or the image data stored in another

information recording medium, based on film 8 or photographic

print 9, at photo-service shop 4.

In step S107, the targeted image displaying program is

selected. In step S108, user 2 performs various processes in

which the targeted image data is selected from among the

displayed image data via the image displaying program

selected in step S107, a slide show is produced of the

selected image data, or the motion image data is produced by

the image data (which is still image data), and further, a

digital album, a design print, or re-ordering data are

produced.

In step S109, user 2 pushes a button or a key which is

previously provided on a picture screen, displayed by the

image displaying program, and activates the copying program

so that user 2 stores the image data and the image displaying

program to display the targeted image data onto a

predetermined area (for example, second information recording

medium 11). Additionally, the image data to be stored into

the second information recording medium is not limited to

original image data. That is, the data which is processed

and produced based on the original image data can also be

included (for example, motion image data or album image data,

produced based on still image data, and image data of

composite design prints). Further, both the original image

data and the processed and produced image data can also be

included. Yet further, various relevant data can also be

included, such as setting data for displaying the image data

by the image displaying program, music/sound data which is

reproduced when the image data is displayed, or print

ordering data.

Next, user 2 inserts second information recording
medium 11 produced by the above-described procedure into
computer terminal 2a, and displays the targeted image data
using the targeted processing program, or offers second
information recording medium 11 to other user 12 who is a
friend or an acquaintance, shown in step S110.

In this way, at information recording medium offering
shop 3 or photo-service shop 4, user 2 obtains first
information recording medium 10 in which an image displaying
program, a copying program, and image data as desired were
stored. Therefore, without special installation of the image
displaying program, user 2 can easily display the image data,
and easily store a set of the targeted image data, the image
displaying program, and the relevant data as desired, by
using the copying program. Namely, user 2 can easily produce
second information recording medium 11 which is customized
for the special use, such as a gift to other user 12.
Furthermore, by additionally storing the copying program into
second information recording medium 11, other user 12 can
produce another customized information recording medium
(which is not illustrated).

Next, in the case that computer terminal 2a is
employed, the procedure of the process, in which first

information recording medium 10 is used, will be detailed,

referring to the ladder chart in Fig. 4, and examples of the

screen structures shown in Figs. 5 and 6. In the example

detailed in the explanation below, the image data has been

previously stored in first information recording medium 10.

However, it is also possible to use the image data stored in

the memory means except for first information recording

medium 10, such as a hard disk, an MO drive, or a PC card

drive, all of which are included in computer terminal 2a, and

can be accessed from CPU 11. Further, it is also possible to

use the image data which has been stored in an external

memory means, such as a server or a computer, via the

network. Additionally, as the image displaying program, a

slide show program via a personal computer is used in the

explanation below, but the copying procedure via a copying

program is also available in other image displaying programs.

[Slide show program for personal computer]

Firstly, user 2 inserts first information recording

medium 10 into a read/write section of computer terminal 2a

[(a) in Fig. 4]. (In this case, the first information

recording medium is a CD-R, and therefore, a CD-R drive is

used. If another information recording medium, such as a

DVD-R, a PD, or a ZIP, is used, a specific drive for each

medium is required.) CPU of computer terminal 2a notes the

entrance of a CD-R. If the image displaying program stored

in the CD-R has already been installed in computer terminal

2a, the CPU activates the installed program, but if the image

displaying program stored in the CD-R has not yet been

installed in computer terminal 2a, user 2 installs the image

displaying program, after which the CPU activates the

installed program [(b) in Fig. 4]. If a single kind of image

displaying program is used, said program is to be activated,

but if a plurality of the image displaying programs are used,

a structure is possible in such way that a menu program is

firstly activated, after which the image displaying program

can be selected on a menu screen.

CPU orders the CD-R drive to read the image data [(c)

in Fig. 4]. CD-R drive then transfers the image data stored

in CD-R to a storage means, such as a memory [(d) in Fig. 4].

CPU produces an album data from the image data transferred

from the storage [(e) in Fig. 4]. The display device such

as a monitor displays an album display screen having a

working menu [(f) in Fig. 4]. The album display screen

having the working menu is shown in Fig. 5.

Displayed on album display screen 14 featuring the

working menu, for example, are tag display section 15 showing

a "source" of the image data, album display section 16

listing the image data using reduced images (thumbnail

images), and working menu section 17 for selecting a usable

image displaying program. "Source" means that the "CD"

showing first information recording medium 10, the "favorites

file" showing a storing section of the image data which user

2 stores as favorite images, and the "from file" showing the

hard disk of computer terminal 2a, the information recording

medium produced from a negative film or print by photo-

service shop 4, or a medium used in the digital camera 5, and

"from digital camera" showing digital camera 5 or cell-phone

5 incorporating a camera.

In Fig. 5, seven kinds of the working menus are shown,

that is, "PC slide show" displays the slides, while

sequentially changing the image data on the personal

computer, "DVD slide show" writes the motion image data,

produced based on the image data, onto the recording medium

in such a way that the motion image data can be displayed via

a DVD player, "album production" produces a digital album

using the image data, "design production" produces a designed

print of a post card using the image data, "re-order print"

orders re-prints of the image data, "backup processing image

data" backs up the image data via a predetermined process,

and "just back-up" merely produces backup data. However the working menus are not limited to those above, and it is also possible to display various programs, which display the image by predetermined display methods based on the image data.

For example, by using the input device, such as a mouse, a keyboard, or a touch panel, when user 2 selects the targeted program among the image displaying programs displayed on working menu section 17 in Fig. 5 (in this case, "PC slide show" is selected), the instruction, requiring display of the slide show production menu, is sent from the input device to CPU [(g) in Fig. 4]. The CPU then displays slide show production menu display screen 18 [(h) in Fig. 4].

On slide show production menu display screen 18, slide show setting section 19 and selected image data display section 20 are displayed. Slide show setting section 19 includes an area for displaying the image data as the list, as well as an area for setting the image interval during the slide show, transition effects, and BGM (back ground music) during the slide show. Selected image data display section 20 displays the image data to be reproduced for the slide show. Fig. 6(a) shows that the still image data is recorded as the image data, but the motion image data as well as still image data can also be recorded, and for this case, the still

image data and the motion image data are mixed and displayed

on a list display section, as shown in Fig. 6(b). User 2 can

distinguish between the still image data and the motion image

data by noting extensions, but in order that user 2 can more

early distinguish them at a glance, display forms of both

types of image data can be changed. Fig. 6(b) is an example

showing the image data obtained by reading out image

information recorded on the film. For displaying the image

data recorded in information recording medium 7, shown in

Fig. 6(c), the still image data and the motion image data

recorded in information recording media 7 are sorted with

respect to each information recording medium 7, and then

displayed. Further, for displaying the image data recorded

in digital camera 5, shown in Fig. 6(c), the still image data

and the motion image data recorded in digital camera 5 are

sorted with respect to specific digital cameras 5, and

displayed.

Using the input device, user 2 selects the image data

to display the slides, sets the slide show, sets the BGM, and

pushes the start switch of the slide show provided on

selected image data display section 20, by which slide show

production information is sent to the CPU [(i) in Fig. 4],

after which the CPU performs the display of the slide show on

the display device [(j) in Fig.4]. When only still image
data is selected, the slide show is produced based on the
conditions established on slide show setting section 19.
When both still image data and motion image data are
selected, the motion image data, reproduced by the image
interval, any transition effects, and BGM, established on
slide show setting section 19, is formed in regard to the
still image data, while the motion image data to be
reproduced as a set of the slide show is produced via
combining the motion image data and the selected motion image
data. Additionally, the image based on the motion image data
can be displayed separately from the image based on the still
image data, and when the image based on the motion image data
is relatively small, the motion image data can be reproduced
on the image based on the still image data, via another
window, and further, when music/sound information is included
in the motion image data, the sound volume of BGM can be
reduced or muted during reproduction of the motion image
data.

During the above-described operation, user 2 can
monitor the slide show, but if user 2 quits the image
displaying program (the slide show program in this case), and
wants to display the slide show under the same conditions,

user 2 must re-select the image data, re-set the slide show

and re-set the BGM, which is very inconvenient. Further,

when the slide show is not only enjoyed by user 2, but also

presented to the acquaintance, it is preferable that only the

necessary image data is shown and the slide show is conducted

without any complicated operations. Accordingly, in the

present embodiment, it is possible to record both the image

data and the image displaying program (slide show program in

this case), selected by user 2, into another information

recording medium, via a simple operation.

To be more precise, after user 2 checks the slide show,

user 2 pushes copy button 21 [which is the "store into CD-R"

button in Fig. 6(a)] which is previously provided in selected

image data display section 20 of slide show production menu

display screen 18. Then a signal to copy (which is a

selected image data copying signal) is transferred from the

input device to CPU [(k) in Fig. 4], and thereby the copying

program is operated. Since the copying program causes the

computer to function as copy signal receiving means 13a, copy

data producing means 13b, and writing means 13c (see Fig. 3),

when copy signal receiving means 13a receives the signal for

giving an order to copy, copy data producing means 13b

produces the copy data [(l) in Fig. 4].

The copy data includes the image data selected by user 2 as well as the image displaying program for displaying the image data, and further, the copy data can include thumbnail image data, which is used when plural image data are shown in the list on the screen. Yet further, the copy data can include related data, such as the setting data, which means the slide display order, image intervals, and transition effects, and music/sound data, which is reproduced simultaneously with the image data.

When the production of copy data is completed, writing means 13c starts the copy operation into a predetermined area (a blank CD inserted CD-R drive, in this case), [(m) in Fig. 4]. When the copy operation is completed, CD-R drive sends a copy end signal to CPU [(n) in Fig. 4], after which CPU orders CD-R drive to eject the copied CD-R [(o) in Fig. 4], as well as displays the end of copy on the display device [(p) in Fig. 4]. Further, CPU orders the storage means to clear the data used for copying, and after the order is received, the storage means clears the copy data, by which the total operation is completed [(q) in Fig. 4].

The above explanation concerns the case in which the slide show is selected as the working menu, however, second information recording medium 11 can also be produced in the

case in which another operation is selected, the outline of
which is described below.

[Slide show for DVD]

In the case of the PC slide show, the image data is
sequentially displayed in the form of slides by the
predetermined transition effects, which was described above.
In recent years, there was a great increase in the number of
user 2 or other user 12, both having available DVD players
which can reproduce the image data via the DVD-R or CD-R.
The DVD player does not require a long start-up time, which
is different from a personal computer, and is easily
operated, and a large number of people can view the image
data on a DVD player. Accordingly, it is convenient for the
user to reproduce a slide show using a DVD player.

In the present embodiment, a button for the "DVD slide
show" is provided in working menu section 17 in Fig. 5. When
user 2 pushes said button, the DVD slide show production menu
screen (which is not illustrated) is displayed. User 2
selects the targeted image data as well as the music/sound
data, and orders the production of the DVD slide show. If the
selected image data is still images, the difference data
based on special predetermined transition effects is added to
the image data, and thereby a motion image data is produced.

Further, if the selected image data includes both still image
data and motion image data, firstly the motion image data is
produced from the still image data by the above-described
method, then the produced motion image data and the selected
motion image data are combined, and finally the combined
motion image data is reproduced as an integrated set of a
slide show. Said motion image data can be formed as various
structures which are useful in the DVD player, such as MPEGs
1, 2, or 4. Concerning the production method of the motion
image data based on the still image data, various methods can
be used, for example, the method disclosed in Japanese Patent
Publication No. 2003-259303 by the inventor of the present
invention can be used.

After the motion image data is produced, user 2 pushes
copy button 21 [which is the "store into CD-R" button in Fig.
6(a)] in the DVD slide show production menu screen, by which
signals for giving an order to copy (which is a selected
image data copy signal) is transferred from the input device
to the CPU, and copy signal receiving means 13a receives the
signal for giving the order to copy, after which copy data
production means 13b produces the copy data including the
motion image data, the slide show program, the original image
data, music/sound data, and the setting data for producing

the motion image, and finally, writing means 13c writes the

copy data onto a blank CD, which becomes second information

recording medium 11.

[Album production]

When the amount of image data becomes excessive, it

becomes difficult to select the targeted image data. In that

case, a digital album is very convenient, in which a great

number of images data can be selected and arranged, and which

is very easy to search for a specific image by the user.

Accordingly, in the present embodiment, an "album

production" button is provided in working menu section 17 in

Fig. 5. When said album production button is pressed, an

album production menu screen (which is not illustrated) is

displayed. On that album production menu screen, user 2 can

classify the image data and can input titles, can input

detailed information for each image data, or can set the

display for turning over the pages of each album. After the

production of the album, when user 2 clicks the copy button

on the screen, the specified image data copy signal is

transferred from the input device to the CPU, and copying

signal receiving means 13a receives the signal (see Fig. 3).

Copy data production means 13b produces the copy data

including the selected image data, the album displaying

program, and the music/sound data reproduced with the setting

data for an album and the album display, as desired.

Further, writing means 13c stores the copy data onto a blank

CD so that second information recording medium 11 is

produced.

[Design production]

In recent years, there has been a huge increase of the

number of users who display their image data onto their

computer screen, as well as produce custom designed prints,

such as post cards, based on the image data, and therefore,

it is very convenient if the design prints are produced via

first information recording medium 10 of the present

embodiment. Further if it is possible that the processed

image data, and the order data, including the size of the

custom designed prints, the design type of post cards or the

name cards, and the number of the producing prints, are set

and stored in the information recording medium, the user can

easily place an order of the design prints, by introducing

said information recording medium to information recording

medium offering shop 3, or sending the data to photo-service

shop 4 via a network.

Accordingly, in the present embodiment, a "design

production" button is provided in working menu section 17 in

Fig. 5. When said design production button is pressed, a

design production menu screen (which is not illustrated) is

displayed. On that design production menu screen, user 2 can

manipulate the image data as enlargement, reduction or

rotation of the image, on a previously set template, further

user 2 can input text to be printed on designed prints, and

yet further, can submit ordering data, such as the size of

the designed prints, and the production amount of the

designed prints. When print ordering data signals based on

the image data are received, a specific print ordering data

file is produced based on the print ordering data signals.

When user 2 clicks the copy button on the screen, the

specified image data copy signal is transferred from the

input device to a CPU, whereby copying signal receiving means

13a receives the signal (see Fig. 3). Copy data production

means 13b produces the copy data, including the combined

image data, the print ordering data, as well as the program

for displaying the original image data used for the design

prints, the image data, and the print ordering data, as

desired. Further, writing means 13c stores the copy data

onto a blank CD so that second information recording medium

11 is produced.

　　　　[Print re-ordering]

In order to re-order the prints, user 2 generally

introduces the image data to be re-ordered to the print

service shop, and the shop describes an ordering sheet. If

it is possible to make a set of the image data to be re-

ordered and the ordering sheet, and to store the set onto the

information recording medium, the user can place a re-order,

using said information recording medium, which becomes very

convenient.

Accordingly, in the present embodiment, "print re-

ordering" button is provided in working menu section 17 of

Fig. 5. When the print re-ordering button is pressed, a

print re-ordering menu screen (which is not illustrated) is

displayed. On the print re-ordering menu screen, user 2 can

select the image data to be re-ordered, and can produce a re-

ordering data including ordering information, such as the

size and number of the prints. After the print ordering data

is produced, user 2 clicks the copy button of the screen, the

specified image data copy signal is transferred from the

input device to a CPU, and the copying program works so that

copying signal receiving means 13a receives the signals (see

Fig. 3). Copy data production means 13b produces the copy

data, including the selected image data, the print ordering

data, and the program for displaying the image data, as well

as the print ordering data, as desired. Further, the copying
program works so that writing means 13c stores the copy data
onto a blank CD, and thereby, second information recording
medium 11 is created.

Additionally, concerning the image data and relevant
information stored in first information recording medium 10
as well as second information recording medium 12, it is
preferable to display them in a single file when they are
viewed from the outside, and further, they are preferably in
a compressed form. Yet further, it is preferable that they
are formed in such way that they can be accessed only via an
exclusive software. Thereby, data retrieving is simplified,
or partial missing of the data is prevented, and which is
very beneficial for the user 2 or user 12. Still further, it
is possible to obtain a large number of users who exclusively
use the present embodiment.

[Back-up of the processed image]

The image data, which is obtained by digital cameras 5
or cell-phone 6 incorporating a photo-capturing function, is
not always suitable for displaying on computer terminal 2a or
for outputting the prints. That is, a color management
process may be conducted on the image to adjust the desired
color, including brightness and gradation. In this case, it

is very cumbersome if the image data is selected and

processed image by image, but it is very convenient if the

selected image data can be processed as a group, and then

backed up.

Accordingly, in the present embodiment, a "processed

image back-up" button is provided on working menu section 17

of Fig. 5. When the print re-ordering button is pressed, a

processed image back-up production menu screen (which is not

illustrated) is displayed. On the processed image back-up

production menu screen, after user 2 selects the image data

to be processed, user 2 clicks the copy button on the screen,

then the specified image data copy signals are transferred

from the input device to a CPU. After copying signal

receiving means 13a receives the signals (see Fig. 3), copy

data production means 13b produces the copy data, including

the selected and processed image data, the original image

data, the setting data showing the contents of the process,

and the program for displaying the image data, as desired.

Writing means 13c stores the copy data onto a blank CD, and

thereby, second information recording medium 11 is produced.

[Just back-up]

When photographic images are stored and controlled as

image data, if there is a problem in the memory means for

storing the image data, such as a hard disk, the image data
stored in the memory means cannot be read out, for which
reason, back-up data is ordinarily produced. In this case,
though the back-up data may be produced via the function of
an OS (which is operating software), the production of back-
up data is very problematic for users who are unaccustomed to
the operation of a personal computer.

Accordingly, in the present embodiment, a "just back-
up" button is provided in working menu section 17 of Fig. 5.
When the just back-up button is pressed, a just back-up
production menu screen (which is not illustrated) is
displayed. On the just back-up production menu screen, user
2 clicks the copy button on the screen, then the specified
image data copy signal is transferred from the input device
to the CPU. After copying signal receiving means 13a
receives the signals (see Fig. 3), copy data production means
13b produces the copy data, including the image data stored
in the predetermined memory means (for example, first
information recording medium 10), and the program for
displaying the image data, as desired. Writing means 13c
stores the copy data onto a blank CD, and thereby, second
information recording medium 11 is produced.

As described above, user 2 is able to display the image

data, via first information recording medium10, which is

offered by the present system. If only user 2 clicks copy

button 21 which is previously provided on the screen of each

image display program, user 2 can record onto second

information recording medium 11, the image data (original

image data, motion image data, and the processed image data)

which user 2 selected, the image display program for

displaying the image data, and other relevant data (the

setting data, the ordering data, and the music/sound data),

as desired. Accordingly, when user 2 displays the image

data, user 2 need not select the image data or perform

setting of the display, which were necessary for the

conventional art. If only user 2 activates newly produced

second information recording medium 11, user 2 is able to

display the targeted image data via the targeted method.

Described above is the structure, wherein the image

display program as well as the copying program is stored in

first information recording medium 10, which is to be offered

to user 2. However, the present invention is not limited to

the above structure. That is, also used may be a structure

wherein computer terminal 2a of user 2, and photo-service

server 200 for offering the program are connected to each

other via communication network 100, and thereby, the program

is also available to user 2 via a network as electrical data.

Next, the program and the information recording medium

production terminal, related to the second embodiment of the

present invention, will be detailed, while referring to Fig.

7. Fig. 7 is a ladder chart showing the procedures which are

performed on the information recording medium production

terminal.

Though these procedures were explained in the above-

described first embodiment, wherein first information

recording medium 10, in which the image displaying program

and the copying program were stored, was offered to user 2,

and second information recording medium 11 was produced from

first information recording medium 10 via computer terminal

2a of user 2, it is also possible to activate the copying

program of the present invention via information recording

medium production terminal 3a of information recording medium

offering shop 3.

Referring to the ladder chart in Fig. 7, the process

performed in information recording medium production terminal

3a will now be described. Firstly, user 2 inserts

information recording medium 7 into the input section of

information recording medium production terminal 3a (the

input section typically means a slot for receiving the

information recording medium, such as a memory card, floppy

disk, or MO, or means a connection terminal for digital

camera 5 or cell-phone 6 incorporating a photo-capturing

function), or connects a digital device to the input section

[(a) in Fig. 7]. CPU thereby detects information recording

medium 7 or the digital device [(b) in Fig. 7], and displays

an insertion request of a writable information recording

medium (a CD-R in this case) on a display device, such as a

CRT, or a character LCD [(c) in Fig. 7].

After the insertion of CD-R into CD-R drive [(d) in

Fig. 7], an insertion signal of CD-R is transferred from CD-R

drive to the storage means [(e) in Fig. 7], and on the

display device [(f) in Fig. 7], the storage means requests

the user whether to copy or not. Next, user 2 orders the

execution to copy via an input device, such as a keyboard,

push buttons, or a touch panel, after which a copy execution

ordering signal is transferred to CPU [(g) in Fig. 7]. Upon

receiving the signal, CPU reads out the image data stored in

the information recording medium or the digital device from

the input section, and copies the image data onto a blank CD-

R inserted in the CD-R drive [(h) in Fig. 7].

After the image data is copied onto the CD, CD-R sends a copy end signal to the CPU [(i) in Fig. 7]. Next, CPU determines whether the image displaying program has been recorded on the CD-R. If the image displaying program has not been recorded, then the storage means copies the image displaying program onto the CD-R [(j) in Fig. 7]. After the image displaying program is positively recorded, CD-R drive sends a "copy end" signal to the CPU [(k) in Fig .7], then, CPU orders the CD-R drive to eject the CD-R having the image displaying program [(k) in Fig. 7], and further, displays "end of copy" on the display device [(m) in Fig. 7].

Additionally, writing of the image data and writing of the program are performed separately, because there is the possibility that user 2 employs an information recording medium in which the image displaying program has already been stored. However, it is also possible to make a structure in which when a blank CD is employed, copying signal receiving means 13a receives the specified image data copying signal, next, copy data production means 13b produces the copy data including the image data and the image displaying program, after which writing means 13c writes the image data and the image displaying program, as one operation. Further, it is also possible to have a structure in which after information

recording medium 7 is inserted into the input section, or a digital device is connected to the input section, a list of image data is displayed on the display device, and the image data to be copied is selected via the input device.

By executing the copying program on information recording medium production terminal 3a, user 2 only needs to insert digital camera 5 or cell-phone 6 incorporating a picture-capturing function, or inserts only information recording medium 7, into information recording medium production terminal 3a, the image data, recorded in the digital device or information recording medium 7, is automatically read out, and recorded together with the image displaying program for displaying the image data, so that second information recording medium 11 is produced. Accordingly, user 2 can easily view the image data, while using computer terminal 2a.

EFFECTS OF THE INVENTION

As described above, according to the program and the information recording medium of the present invention, in which said program is recorded, the image data can be easily displayed, and the targeted image data can also be easily displayed via the desired display method, without separately

selecting the image data, or setting the process or the
display.

Because, the copying program, which copies the targeted
image data and the image displaying program for displaying
the image data, and the image data or the image displaying
program, as desired, are set together and stored in first
information recording medium 10, and therefore, the image
data can be viewed via the image reproducing device, such as
a computer terminal, a DVD player, or a DVD recorder.
Further, because the copying program stored in first
information recording medium 10, receives the specified image
data copy signal which was sent upon pressing of the button
provided on the screen displayed by the image displaying
program, which produced the copy data including the image
data, the image displaying program, the data relating to the
image data, after which it recorded the copy data into second
information recording medium 11. Accordingly, when the user
inserts second information recording medium 11 into the
computer terminal, and activates the computer terminal, the
image data is easily displayed.